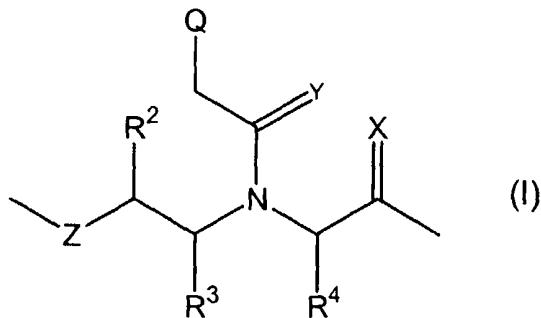


**IN THE CLAIMS:**

Please cancel claims 37-62, and add new claims 63 - 71 as follows:

Claims 37 - 62 (canceled)

Claim 63 (new ): A peptide nucleic acid probe comprising from 10 to 30 polymerized moieties of formula (I)



wherein each X and Y are independently chosen from O and S,

each Z independently is chosen from O, S, NR<sup>1</sup>, and C(R<sup>1</sup>)<sub>2</sub>,

wherein each R<sup>1</sup> is independently chosen from H, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkenyl, and C<sub>1-6</sub> alkynyl,

each R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are independently chosen from H, the side chain of a naturally occurring amino acid, the side chain of a non-naturally occurring amino acid, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkenyl, C<sub>1-4</sub> alkynyl, and a functional group,

and each Q is independently chosen from a naturally occurring nucleobase, a non-naturally occurring nucleobase, an intercalator, a nucleobase-binding group, a label and H,

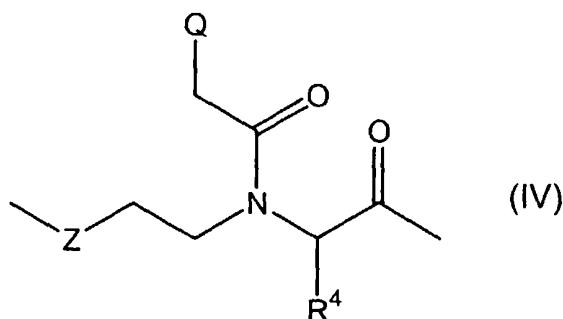
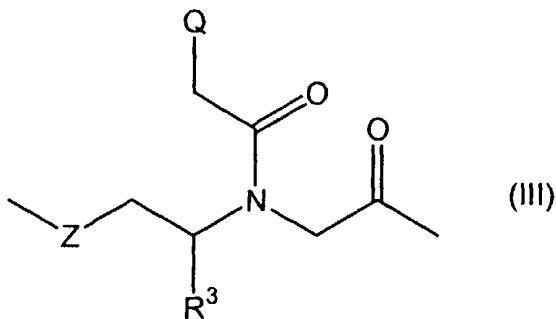
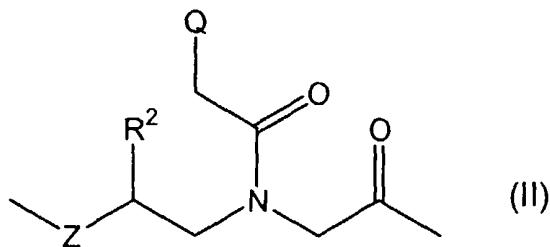
wherein a series of Qs of adjacent moieties are chosen so as to form

one of the following subsequences

GGC TTT TAA GGA TTC (SEQ ID NO: 40)  
GAT CAA TGC TCG GTT (SEQ ID NO: 44)  
CGA CTC CAC ACA AAC (SEQ ID NO: 76)  
GTC TTT TCG TCC TGC (SEQ ID NO: 89), or  
GTC TTA TCG TCC TGC (SEQ ID NO: 90)

or a mixture of such probes.

Claim 64. (new) The peptide nucleic acid probe of claim 63, wherein each of the 10 to 30 polymerized moieties of formula (I) are independently chosen from



or a mixture of such probes.

Claim 65. (new) The peptide nucleic acid probe according to claim 63, wherein each Z is independently chosen from NH, NCH<sub>3</sub> and O, and each R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> is independently chosen from H, the side chain of a naturally occurring amino acid, the side chain of a non-naturally occurring amino acid, and C<sub>1-4</sub> alkyl,  
or a mixture of such probes.

Claim 66 (new) The peptide nucleic acid probe according to claim 63, wherein each Z is independently chosen from NH and O, and each R<sup>2</sup> is independently chosen from H or the side chain of Ala, Asp, Cys, Glu, His, HomoCys, Lys, Orn, Ser and Thr, or a mixture of such probes.

Claim 67. (new) The peptide nucleic acid probe of claim 63, further comprising one or more labels, or a mixture of such probes, which labels may be mutually identical or different, which probes may comprise one or more linkers, and which probes may be mutually identical or different.

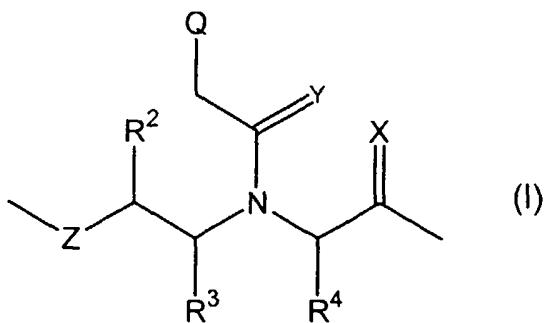
Claim 68. (new) The peptide nucleic acid probe of claim 63 chosen from

Lys(Flu)-GGC TTT TAA GGA TTC-NH <sub>2</sub>	(OK 689/modified SEQ
ID NO: 40)	
Lys(Rho)-GGC TTT TAA GGA TTC-NH <sub>2</sub>	(OK 702/modified SEQ
ID NO: 40)	
Flu-β-Ala-β-Ala-GAT CAA TGC TCG GTT-NH <sub>2</sub>	(OK 624/modified SEQ
ID NO: 44)	
Flu-β-Ala-β-Ala-CGA CTC CAC ACA AAC-NH <sub>2</sub>	(OK 612/modified SEQ
ID NO: 76)	
Lys(Flu)-GTC TTT TCG TCC TGC-NH <sub>2</sub>	(OK 745/modified SEQ
ID NO: 89)	
Lys(Rho)-GTC TTA TCG TCC TGC-NH <sub>2</sub>	(OK 746/modified SEQ
ID NO: 90)	

wherein Flu denotes a 5-(and 6)-carboxyfluorescein label and Rho denotes a rhodamine label,  
or a mixture of such probes.

Claim 69. (new) A kit comprising:

at least one peptide nucleic acid probe comprising from 10 to 30 polymerized moieties of formula (I)



wherein each X and Y are independently chosen from O and S,

each Z independently is chosen from O, S, NR<sup>1</sup>, and C(R<sup>1</sup>)<sub>2</sub>,

wherein each R<sup>1</sup> is independently chosen from H, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkenyl, and C<sub>1-6</sub> alkynyl,

each R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> are independently chosen from H, the side chain of a naturally occurring amino acid, the side chain of a non-naturally occurring amino acid, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkenyl, C<sub>1-4</sub> alkynyl, and a functional group,

and each Q is independently chosen from a naturally occurring nucleobase, a non-naturally occurring nucleobase, an intercalator, a nucleobase-binding group, a label or H,

wherein a series of Qs of adjacent moieties are chosen so as to form one of the following subsequences

GGC TTT TAA GGA TTC (SEQ ID NO: 40)

GAT CAA TGC TCG GTT (SEQ ID NO: 44)

CGA CTC CAC ACA AAC (SEQ ID NO: 76)

GTC TTT TCG TCC TGC (SEQ ID NO: 89), or

GTC TTA TCG TCC TGC (SEQ ID NO: 90)

and

a detection system with at least one detecting reagent.

Claim 70. (new) The kit of claim 69 comprising a mixture of the at least one peptide nucleic acid probe.

Claim 71. (new) The kit of claim 69, further comprising a solid phase capture system.